

In the Claims

Claims 1-12 (canceled).

Claim 13 (new) A process for the removal of sour gas from pressurised natural gas which is polluted by sulphur compounds and other sour gas compounds, comprising

- initially feeding the natural gas, which is to be desulphurised, into a sour gas absorption unit, in which the sulphur components and any other components are absorbed by a physically acting solution;
- heating the absorbate;
- feeding the absorbate into a high-pressure flash unit, in which the sour-gas-poor absorbent and desorbed sour gas contained in the resulting mixture are separated;
- cooling the desorbed sour gas and condensing the vaporised absorbent out of the sour gas stream;
- freeing the sour-gas-poor absorbent from the high-pressure flash unit from residual sour gas in a gas stripping unit by means of stripping gas; and
- cooling and recycling the absorbent obtained to the sour gas absorption unit, wherein a pressure is set in the high-pressure flash unit that permits the desorbed sour gas to be condensed by means of cooling water or cooling air.

Claim 14 (new) The process according to claim 13, wherein the laden stripping gas obtained is cooled and fed to the sour gas absorption unit.

Claim 15 (new) The process according to claim 13, wherein the stripping gas comprises either purified feed gas or desulphurised natural gas.

Claim 16 (new) The process according to claim 14, wherein the stripping gas is fed to the sour gas absorption unit simultaneously with the feed gas.

Claim 17 (new) The process according to claim 13, wherein the absorbent contained in the desorbed sour gas is condensed and admixed to the absorbate prior to heating the absorbate.

Claim 18 (new) The process according to claim 13, wherein the pressure of the absorbate to be heated is set to a pressure that is higher than that in the sour gas absorption unit.

Claim 19 (new) The process according to claim 14, wherein the pressure of the stripping gas used is set to a pressure above that of the sour gas absorption unit and then fed into the sour gas absorption unit.

Claim 20 (new) The process according to claim 13, wherein

- prior to being heated, the absorbate from the sour gas absorption unit is fed to a recycle flash unit, in which a partial pressure reduction takes place, and the absorbate and desorbed gas contained in the resulting mixture are separated, and

- the desorbed gas obtained in the recycle flash unit is re-compressed and recycled to the sour gas absorption unit.

Claim 21 (new) The process according to claim 20, wherein the pressure of the absorbate to be heated is set to a pressure that is higher than that in the recycle flash unit.

Claim 22 (new) The process according to claim 19, wherein the pressure in the high-pressure flash unit is higher than that in the recycle flash unit.

Claim 23 (new) The process according to claim 19, wherein the laden stripping gas and the gas obtained in the recycle flash unit are combined, re-compressed and fed to the sour gas absorption unit.

Claim 24 (new) The process according to claim 13, wherein the high-pressure flash unit consists of a cascade of several series-connected flash vessels preceded by partial pressure reduction and re-compression of the sour gases obtained from the downstream flash vessels to the pressure of the first flash vessel of the cascade.